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NEW RECORDS OF CHRYSIDIDAE (HYMENOPTERA) FROM RUSSIA WITH DESCRIPTION OF FIVE NEW SPECIES

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Summary. The genus *Haba* Semenov, 25 species and 3 subspecies of Chrysididae are newly recorded from Russia, as well as five new species are described: *Pseudomalus agnolii* Rosa, **sp. n.** (Tver Prov.), *Chrysis mokrousovi* Rosa, **sp. n.** (Abkhazia and Krasnodar Terr.), *C. vinokurovi* Rosa, **sp. n.** (Stavropol Terr.), *C. lyda* Rosa, **sp. n.** (Krasnodar and Stavropol Terr.), *C. sooni* Rosa, **sp. n.** (Primorsky Terr.). Hitherto unknown female of *Elampus turcmenicus* (Linsenmaier, 1968) is described. Currently the fauna of Russian Chrysididae numbers 330 species and 11 subspecies in 23 genera, including current data.

Key words: Chrysididae, taxonomy, new species, fauna, new records, Russia.

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Резюме. Род *Haba* Semenov, 25 видов и три подвида ос-блестянок впервые указываются для России, а пять видов описываются как новые для науки: *Pseudomalus agnolii* Rosa, **sp. n.** (Тверская обл.), *Chrysis mokrousovi* Rosa, **sp. n.** (Абхазия и Краснодарский край), *C. vinokurovi* Rosa, **sp. n.** (Ставропольский край), *C. lyda* Rosa, **sp. n.** (Краснодарский и Ставропольский края), *C. sooni* Rosa, **sp. n.** (Приморский край). Описывается ранее неизвестная самка *Elampus turmenicus* (Linsenmaier, 1968). В настоящее время фауна Chrysididae России насчитывает 330 видов и 11 подвидов из 23 родов, включая настоящие данные.

INTRODUCTION

Taxonomical and faunistic studies on Russian Chrysididae are scarce: the only catalogue dates back to Radoszkowski (1866) and the only key, limited to the European part of the USSR, was compiled by Nikol'skaya (1978). Before our research on the Siberian fauna (Rosa *et al.*, 2017b, 2017c) and the present article, the number of known Russian chrysidids was 262 species and 8 subspecies, excluding some unreliable published data. The validity of several old identifications is questionable, as well as some recent data published by different authors (e.g. Leontiev, 2015). During the preparation of the update checklist of the Russian cuckoo-wasps we examined some thousand specimens deposited in the collections of St. Petersburg and Vladivostok and in some private collections. After our research the total number of Russian Chrysididae is raised up to 332 species and 11 subspecies. This count is far from the number of expected species, which should include other numerous eastern European and Asian species. In fact, during our research we added for Russia some new records of species largely known in the neighboring countries, such as *Hedychridium adventicium* Zimmermann, 1962 and *H. parkanense* Balthasar, 1946 (previously known only from Central and Eastern Europe); *Haba almasyana* (Mocsáry, 1911) and *Chrysis castigata* Linsenmaier, 1959 (previously known only from Central Asia); *Ellampus assamensis* (Mocsáry, 1911) (previously known from Indian specimens); *Pseudomalus grandis* (Tsuneki, 1950) and *P. nipponicus* (Tsuneki, 1970) (both known only from Japan); *Chrysis buda* Bohart, 1991; *Chrysura koma* (Tsuneki, 1950) and *Omalus berezovskii* (Semenov, 1932) (previously known only from China and Korea). Five new species are also described below.

MATERIAL AND METHODS

The results presented in this paper are based on specimens collected in the last years in Far East by entomologists of the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok, Russia. Next abbreviations are used for the collectors: AL – A.S. Lelej; MM – M.V. Mokrousov; MP – M.Yu. Proshchalykin;

VL – V.M. Loktionov; SB – S.A. Belokobylskij. Material has been checked from the following collections: EIHU – Entomology Institute, Hokkaido University, Japan; HNHN – Magyar Természettudományi Múzeum Budapest, Hungary; IBSS – Federal Scientific Center of the Biodiversity, Vladivostok, Russia; ISEA – Institute of Systematics and Evolution of Animals, Krakow, Poland; JNMP – Národní Museum, Prague, Czech Republic; MHNG – Muséum d'Histoire Naturelle, Genève, Switzerland; MMC – Mikhail Mokrousov Collection, Nizhny Novgorod, Russia; MNHN – National Natural History Museum, Paris, France; MNHU – Natural History Museum of the Humboldt-University, Berlin, Germany; NHML – Natural History Museum, London, Great Britain; NHMW – Naturhistorisches Museum Wien, Vienna, Austria; NHRS – Swedish Museum of Natural History, Stockholm, Sweden; NMLS – NaturMuseum, Luzern, Switzerland; PRC – Paolo Rosa Collection, Milan, Italy; ZIN – Zoological Institute, St. Petersburg, Russia. Primary types of the new species are deposited at the ZIN, whereas paratypes are deposited also in the other collections. New records are marked by an asterisk (*).

All specimens were examined and described under the stereomicroscope Tegal SCZ; images were taken with Nikon D-80 connected to the stereomicroscope Tegal SCZ and stacked with software Combine ZP, white balance was calibrated using photo-camera settings to reduce blue effect of fluorescent light of Tegal microscope.

Morphological terminology follows Kimsey and Bohart (1991). Abbreviations used in the descriptions as follows: **F1, F2, F3** = flagellomeres 1, 2, 3; **l/w** = length/width; **MOD** = mid ocellar diameter; **MS** = malar space, the shortest distance between base of mandible and margin of compound eye; **OOL** = oculo-ocellar line, the shortest distance between lateral ocellus and compound eye; **P** = pedicel; **PD** = puncture diameter; **POL** = the shortest distance between posterior ocelli; **S2** black spots = two black spots on metasomal sternum 2; **T1, T2, T3** = metasomal terga 1, 2, 3; **TFC** = transverse frontal carina.

LIST OF THE SPECIES

Subfamily Chrysidinae

Tribe Elampini

Genus *Omalus* Panzer, 1801

Omalus Panzer, 1801: 13. Type species: *Chrysis aenea* Fabricius, 1787, by monotypy.

Omalus stella (Semenov et Nikol'skaya, 1954)

Ellampus (*Ellampus*) *stella* Semenov & Nikol'skaya, 1954: 93. Lectotype ♀, designated by Kimsey, 1986; Tajikistan: Stalinabad (Dushanbe) [ZIN] (examined).

SPECIMENS EXAMINED. **Russia**: south of European part: Astrakhan Prov., env. Volzhsky, 46.964709°N 47.526567°E, 6.V 2016, 6 ex. (MM); same locality, 26–27.V 2016, 3 ex.; North Caucasus: Kalmyk Rep., 20 km E vill. Khulkhuta, 46.292°N 46.672°E, 30.V 2016, 1 ex. (MM) [MMC].

DISTRIBUTION. *Russia: (Astrakhan Province, Kalmyk Republic); Tajikistan, Kazakhstan. China.

REMARKS. Copious specimens of *Omalus stella* were collected by M.V. Mokrousov in Astrakhan Prov. and by V.L. Kazenas in Kazakhstan. All these specimens are brilliant red compared with specimens from Tajikistan, which are green with golden reflections (Rosa *et al.*, 2015a). The Russian and Kazakh specimens could be a color variation of the western population, or a separate species, even if we could not find major morphological characters to identify them.

Genus *Philoctetes* Abeille de Perrin, 1879

Philoctetes Abeille de Perrin, 1879: 27. Type species: *Holopyga cicatrix* Abeille de Perrin, 1879 [= *Philoctetes micans* (Klug, 1835)], by subsequent designation of Ashmead, 1902.

***Philoctetes pylnovi* (Semenov, 1932)**

Ellampus pylnovi Semenov, 1932: 35. Holotype – ♂, Uzbekistan: Termez [ZIN] (examined).

SPECIMENS EXAMINED. Ural: Orenburg Prov., Ural River, Spasskoe [ZIN].

DISTRIBUTION. *Russia (Orenburg Province); Uzbekistan.

Genus *Pseudomalus* Ashmead, 1902

Pseudomalus Ashmead, 1902: 229. Type species: *Omalus semicircularis* Aaron, 1885 [= *Pseudomalus janus* (Haldeman, 1844)], by monotypy and original designation.

***Pseudomalus grandis* (Tsuneki, 1950)**

Fig. 1A

Ellampus grandis Tsuneki, 1950: 61. Holotype – ♀, Japan: Honshu, Tochigi Prefecture [EIHU].

SPECIMENS EXAMINED. **Russia**: Far East: Primorsky Terr., Lazovyi, 9.VI 2016, 3 ♀ (VL) [IBSS].

DISTRIBUTION. *Russia (Primorsky Territory); Japan.

***Pseudomalus agnolii* Rosa, sp. n.**

Figs 1B, 2A–F

SPECIMENS EXAMINED. Holotype – ♀, **Russia**: centre of European part: Tver Prov., Kimry distr., Shchelkovo vill., 20.VII–10.VIII 2015 (A. Azarov) [ZIN].

DIAGNOSIS. *Pseudomalus agnolii* sp. n. is a remarkable species, easily identifiable by large size (8 mm), forefemur strongly carinate (Fig. 2B), flagellomeres elongate (Fig. 2A), T3 apical margin deeply notched (Fig. 2F). *P. agnolii* sp. n. and *P. grandis* (Tsuneki, 1950) are indeed the largest known species in the genus *Pseudomalus*. *P. agnolii* sp. n. can be separated by bicoloured body (Fig. 1) (entirely green in *P. grandis*), forefemur carinate (Fig. 2B) (vs. ecarinate) and apical margin of T3 deeply incised (Fig. 2F) (vs. T3 with shallow, barely visible notch). The forefemur largely carinate is similar in shape to the forefemur of *P. cupratus* (Mocsáry,

1889) (= *P. meridianus* Strumia, 1996), from which *P. agnolii* sp. n. is separated by elongate flagellomeres (F2–F11 l/w = 1.5) (Fig. 2A) (vs. subsquare in *P. cupratus*), propodeal angles subrectangular with parallel sides (vs. divergent and pointed in *Ps. cupratus*) and mesosoma punctuation (denser in *P. cupratus*). It also resembles the largest specimens of *P. auratus* (Linnaeus, 1758), but can be separated for: elongate

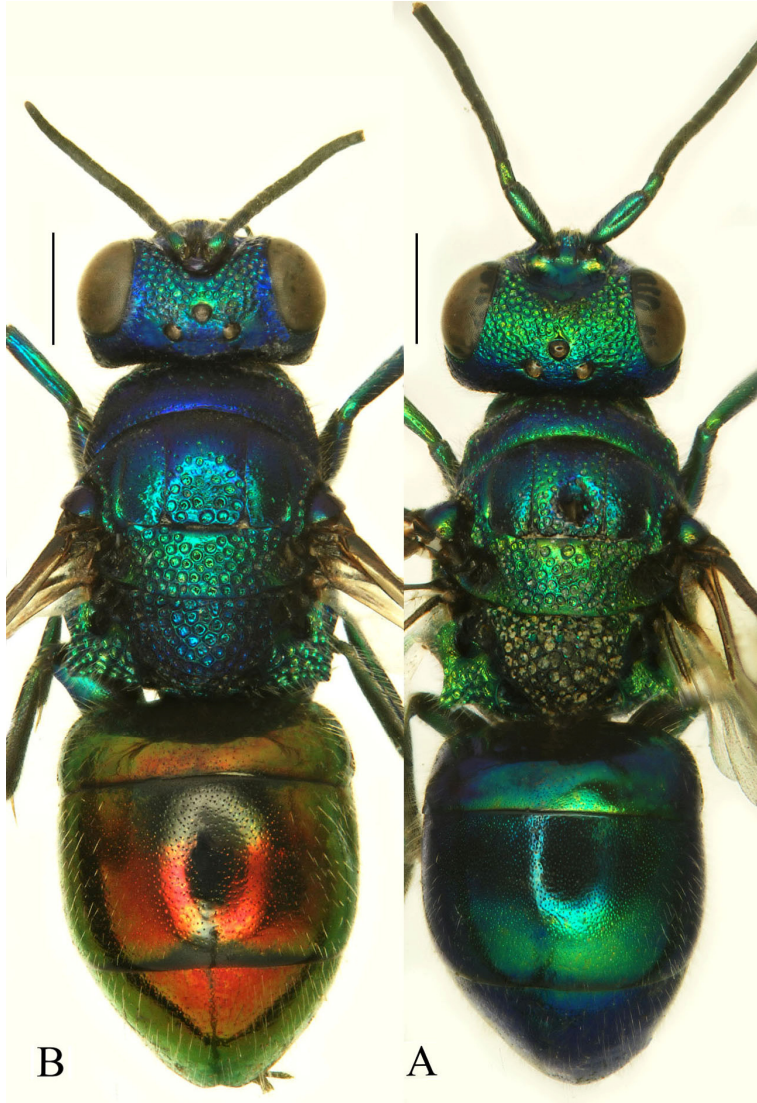


Fig. 1. Habitus, dorsal view. A – *Pseudomalus grandis* (Tsuneki), Primorksy Terr., ♀; B – *P. agnolii* Rosa, sp. n., holotype, ♀. Scale bar = 1.0 mm.

flagellomeres ($l/w = 1.5$) (vs. $l/w = 1.0$), carinate forefemur (vs. ecarinate) and larger size (the largest known specimens of *P. auratus* reach 6.0 mm). It is separated from *P. triangulifer* (Abeille de Perrin, 1877) for the carinate forefemur (vs. ecarinate), a little larger dimensions (the largest known specimens of *P. triangulifer* reach 7.0 mm) and mesosoma with irregular wrinkles on interspaces.

DESCRIPTION. *Female.* Body length 8.0 mm. Fore wing length 5.5 mm. OOL = 2.9 MOD; POL = 2.9 MOD; MS = 0.7 MOD; relative length of P : F1 : F2 : F3 = 1 : 1.3 : 0.9 : 0.8.

Head. Frons, vertex, and face between eye and scapal basin with medium (0.4–0.5 MOD), confluent punctures (Fig. 2A); in dorsal view, from ocelli area to posterior margin of head polished, with scattered and small punctures; around eye posteriorly finely wrinkled. Scapal basin asetose, deep, polished; clypeus transversally rugulose between toruli (Fig. 2A); subantennal space 1.0 MOD. Genae, in lateral view, finely wrinkled; ocellar triangle isosceles, with POL equal to OOL. Postocellar line indistinct.

Mesosoma. Pronotum medially with small, scattered punctures, 1–3 PD apart, with minute punctures on interspaces (Fig. 1C); antero-laterally with larger, deeper and contiguous punctures (Fig. 2B). Mesoscutum with scattered, small punctures (1–4 PD apart) on anterior half; basally with few scattered, large punctures between notauli, with irregular wrinkles on interspaces (Fig. 2C); lateral lobes of mesoscutum with small, shallow, scattered punctures, and wrinkled interspaces; along tegula with a row of foveate punctures; notauli pits short, deep, wide. Mesoscutellum antero-medially impunctate, posteriorly and laterally with large, sub-equal and contiguous punctures. Metascutellum subconical in dorso-lateral view, with foveate-reticulate punctures. Mesopleuron medially with moderately large punctures and weak wrinkles on interspaces; ventrally with large and elongate foveae (Fig. 2B). Forefemur ventrally noticeably carinate (Fig. 2D).

Metasoma. T1 medially polished, with minute punctures irregularly distributed along posterior margin, laterally with double punctuation: with minute, asetose punctures and small, setae-bearing, lacunose punctures. T2 and T3 dorsally with minute punctures, postero-laterally and laterally with double punctuation, with minute, asetose punctures and small, setae-bearing, lacunose punctures. T3 lateral margins straight; median notch deep, open at obtuse angle, lateral angles with blunt apex.

Coloration. Forebody metallic green to blue; metasoma flame red, T2 antero-medially and postero-medially black (Fig. 1B). Scape, pedicel, F1 and F2 metallic green, other flagellomeres black. Legs metallic green to blue, tarsi dark brown. Tegulae metallic bluish. Wings brownish, dark brown along external margin.

Vestiture. Medium-short (1.0–1.5 MOD), whitish, erected, sparse setae on head and mesosoma, denser on pronotum; shorter (1 MOD) and appressed on legs, erect on mid- and hindtibia. T1 and T2 laterally with medium-short erect setae, on T3 longer (2.0 MOD) and erect.

Male. Unknown.

DISTRIBUTION. Russia (Tver Province).

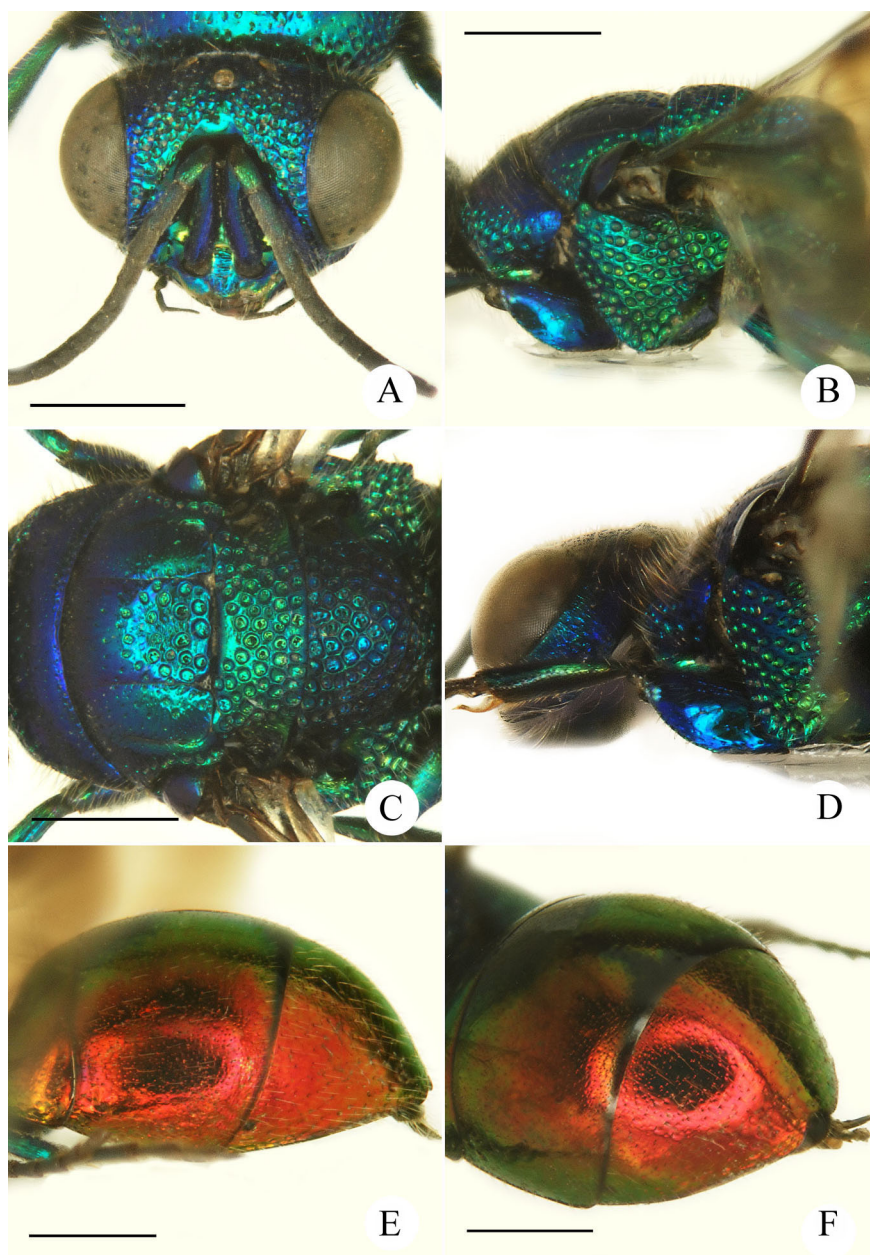


Fig. 2. *Pseudomalus agnolii* sp. n., holotype, ♀: A – head, frontal view; B – mesosoma, lateral view; C – mesosoma, dorsal view; D – fore leg, posterior view; E – metasoma, lateral view; F – metasoma, postero-lateral view. Scale bar = 1.0 mm.

ETYMOLOGY. The specific epithet *agnolii* (masculine name in genitive case) is dedicated to Gian Luca Agnoli (Bologna, Italy), former owner of the holotype, who generously donated it to the ZIN collection.

***Pseudomalus cupratus* (Mocsáry, 1889)**

Elampus (*Elampus*) *auratus* var. *cupratus* Mocsáry, 1889: 92. Holotype – ♀, Croatia: Dalmatia [HNHM] (examined).

SPECIMENS EXAMINED. **Russia:** centre of European part: Belgorod Prov., Khotmizhsk (MM); Crimea: Kara-Dag [Pavesi coll., Milano, Italy].

DISTRIBUTION. *Russia (Belgorod Province, Crimea); Southern Europe.

REMARKS. *Pseudomalus cupratus* can be confused with large specimens of *P. auratus* (Linnaeus, 1758) or *P. violaceus* (Scopoli, 1763) but can be easily recognized by the subrectangular shape of the forefemur (Rosa *et al.* 2017d), the mesoscutum surface wrinkled between punctures, and the purplish-violet metasomal colour. Moreover, it can be separated from *P. auratus* through apical notch of T3 broadly open, and from *P. violaceus* through the lateral angles of the notch sharp (vs. broadly rounded in *P. violaceus*). For differences with *P. agnolii* sp. n. see the diagnosis of the latter.

Genus *Elampus* Spinola, 1806

Elampus Spinola, 1806: 10. Type species: *Chrysis panzeri* Fabricius, 1804, by subsequent designation of Latreille, 1810.

***Elampus assamensis* (Mocsáry, 1911)**

Figs 3A–D

Elampus (*Notozus*) *assamensis* Mocsáry, 1911: 443. Holotype – ♂, India: Assam, Shillong [HNHM] (examined).

SPECIMENS EXAMINED. **Russia:** Far East: Primorsky Terr., Anisimovka, 17.VII 1974, 1 ♀ (AL); same locality, 7.VII 1975, 1 ♀ (Sysoeva); 50 km N Ol'ga, 30.VII 1979, 1 ♀ (SB) [IBSS].

DISTRIBUTION. *Russia (Primorsky Territory); India (Assam).

REMARKS. This is one of the most noticeable and unexpected new records for Russia. *Elampus assamensis* (Mocsáry, 1911) was previously known only from India (Assam). The Russian specimens were collected in the broad-leaved forest on the south of Primorsky Territory, where recently another Hymenoptera from the family Mymaridae (*Camptoptera matcheta* Subba Rao, 1989) was discovered with a similar distribution (Triapitsyn, 2017). Both cases support the hypothesis about the conservation of the relict (Tertiary) fauna in the south of the Russian Far East and its connection with the Oriental region.

Elampus assamensis is one of the most noticeable *Elampus* because of several primitive features, unusual for the genus *Elampus* and more similar to some *Philoctetes* species, namely metascutellum with short, stout lamella; T3 apical margin not

produced in a horseshoe-shaped or falcate rim or any other typical shaped truncation of the genus *Elampus*, but simply with a small apical notch; moreover, the female is without row of setae beneath genae (genal fringe), as females in the genus *Philoctetes*.

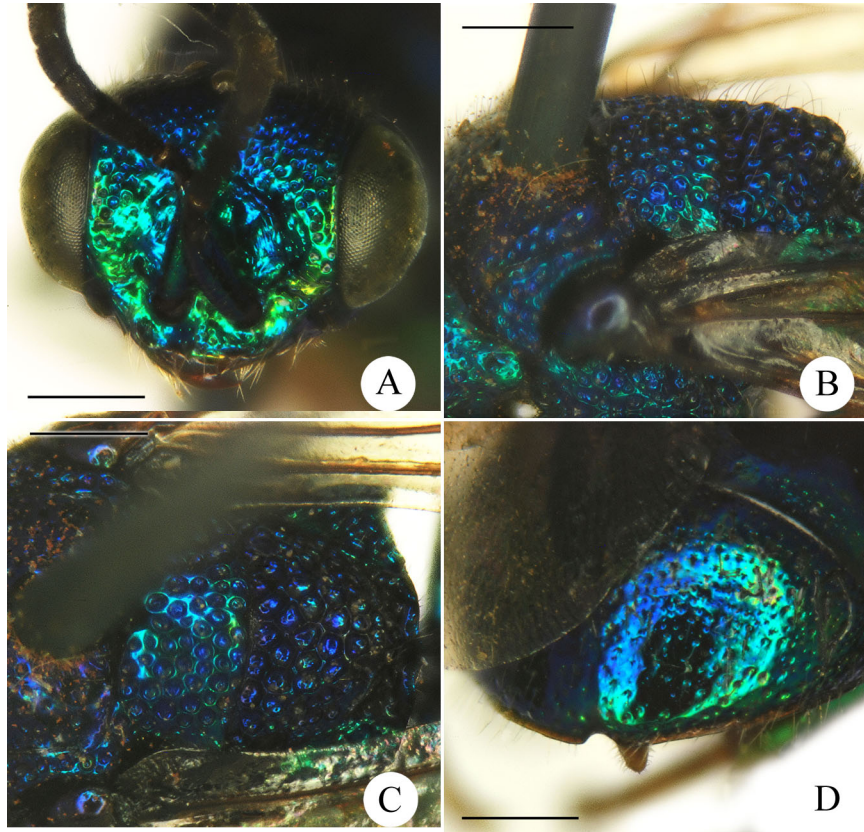


Fig. 3. *Elampus assamensis* Mocsáry, Primorky Terr., ♀: A – head, frontal view; B – mesosoma, dorso-lateral view; C – mesosoma, dorsal view; D – T3, posterior view. Scale bar = 0.5 mm.

***Elampus turcmenicus* (Linsenmaier, 1968)**

Figs 4A–F

Omalus (*Notuzus*) *turcmenicus* Linsenmaier, 1968: 33. Holotype – ♂ (not ♀), Turkmenistan: Ashgabad [NMLS] (examined).

SPECIMENS EXAMINED. **Russia**: European part: Astrakhan Prov., env. Dosang, 46.91155°N 47.9265°E, 6.–7.VI 2016, 1♂, 4♀♀ (MM) [ZIN, PRC]. **Turkmenistan**: Ashgabad, bordure du desert, 28.V 1964, 1 ♂ (holotype) (W.J. Pulawski)) [NMLS].

DIAGNOSIS. *Elampus turcmenicus* is a remarkable desert species, closely related only to the Moroccan *E. rufirostris* Linsenmaier, 1999 for habitus, small dimensions, shape of metasomal lamella, structure of T3 and shape of apical truncation of T3. It was known only on the male holotype (not female, as erroneously given in the original description) and we here describe the female. *E. turcmenicus* is separated from the northern African species by head entirely metallic red (*vs.* face and occiput black in *E. rufirostris*); tegulae and tibiae metallic (*vs.* yellowish); metanotal lamella apically arched (*vs.* subtruncate); T2 apical margin metallic (*vs.* broadly hyaline). The body sculpture is unequal within specimens: generally has shallow, lacunose punctures of various diameter, more or less scattered, or lacunose depressions instead of punctures or foveae, with large, polished and shining interspaces. Only the metanotal lamella is covered by large foveate and contiguous punctures.

DESCRIPTION OF FEMALE (previously unknown). Body length 3.0–4.0 mm. Fore wing length 2.5–3.0 mm. OOL = 2.1 MOD; POL = 2.6 MOD; MS = 0.3 MOD; relative length of P : F1 : F2 : F3 = 1 : 1.3 : 0.9 : 0.8.

Head. Frons, vertex, and face between eye and scapal basin, with medium to large (up to 1 MOD), shallow punctures (Fig. 4A), broadly separate (1–3 PD) or fully polished with shallow depressions (lacunose sculpture) in some specimens. Punctures on ocelli area a little smaller and closer. Scapal basin asetose, deep and irregularly rugulose (Fig. 4A). Genae, in lateral view, impunctate or at most irregularly rugulose; malar spaces, in dorsal view, noticeably convergent. Clypeus medially extended in nose-like protrusion, about 1 MOD long and 1 MOD broad. Ocellar triangle isosceles, with large POL (2.7 MOD). Postocellar line indistinct.

Mesosoma. Pronotum medially with shallow, lacunose, widely separated (1–3 PD) punctures, with polished, shining interspaces; with small, shallow punctures aligned along anterior and posterior margins (Fig. 4C); laterally with deeper and larger punctures (Fig. 4B). Mesoscutum with small, shallow, lacunose punctures, mostly clumped along notauli and anterior margin; notauli and parapsidal furrows complete, tegulae impunctate. Mesoscutellum antero-medially widely impunctate, shining, postero-laterally with lacunose punctures. Metascutellum with foveate-reticulate punctures and elongate lamella, apically subelliptical; in lateral view, lamella longer than mesoscutellum (Fig. 4B). Mesopleuron with shallow, large, foveate punctures (Fig. 4B).

Metasoma. T1 with small, even punctures, subequally spaced (1–3 PD apart), laterally closer. T2 dorsally with alike punctuation (Fig. 4D), laterally and postero-laterally double, with lacunose punctures and minute punctures in interspaces (Fig. 4E). T3 with irregular punctuation, lacunose and contiguous. T3 lateral margins almost straight, slightly sinuous before apical rim; apical notch snout-like, distinctly protruding from apical margin (Fig. 4E); snout-like truncation narrow, of semi-elliptical shape, slightly curved at base (Fig. 4F).

Coloration. Body color variable, from uniformly metallic red to purplish or coppery-bronze. Mandibles brown, apically darker; one male and one female with whitish mandibles, brown at apex. Scape metallic red, pedicel and flagellum black. Legs metallic red, tarsi brown to light brown. Tegulae metallic red. Wings hyaline.

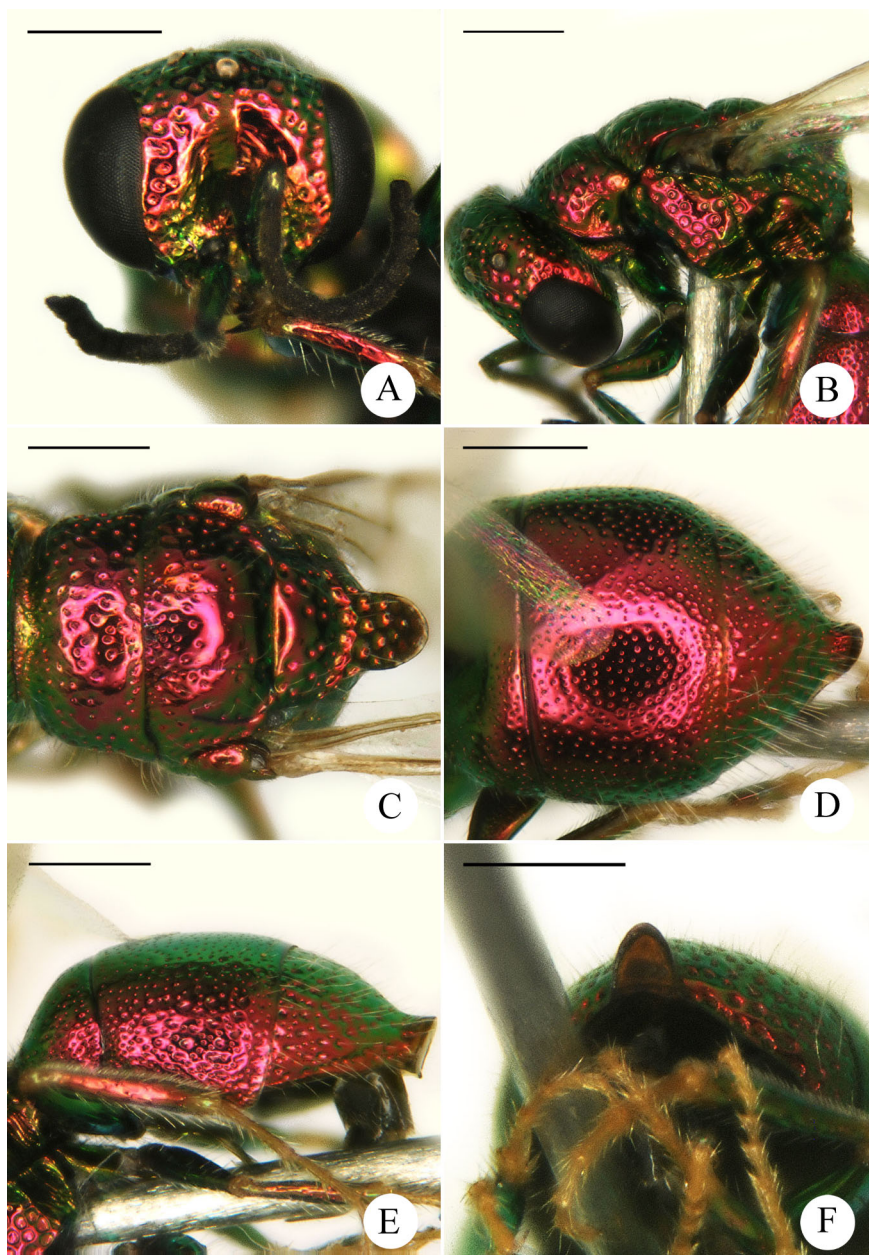


Fig. 4. *Elampus turcmenicus* (Linsenmaier), ♀: A – head, frontal view; B – head and mesosoma, lateral view; C – mesosoma, dorsal view; D – metasoma, dorsal view; E – metasoma, lateral view; F – metasoma, posterior view. Scale bar = 0.5 mm.

Vestiture. Long (1.5 MOD), whitish, sparse and erected setae on head and mesosoma; shorter (1.0 MOD) and erect on legs. T1 and T2 with short and almost appressed setae, on T3 longer (2.0 MOD) and erect, contrasting with short setae on T1 and T2.

Male. Similar to female, with elongate flagellomeres: F1 to F11 l/w ≥ 1.5 (vs. subsquare in female). Clypeal median protrusion less visible. Variable in coloration, with specimens entirely metallic red, bronze or greenish (as the holotype). Tarsi light brown.

DISTRIBUTION. *Russia (Astrakhan Province); Turkmenistan.

Genus *Holopyga* Dahlbom, 1845

Holopyga Dahlbom, 1845: 4. Type species: *Holopyga amoenula* Dahlbom, 1845, by subsequent designation of Ashmead, 1902.

***Holopyga inflammata inflammata* (Förster, 1853)**

Ellampus inflammatus Förster, 1853: 348. Syntypes – ♂, ♀, Hungary, Italy [MNHU].

SPECIMENS EXAMINED. **Russia**: centre of European part: Nizhny Novgorod Prov.: Nizhny Novgorod (MM) [MMC].

DISTRIBUTION. *Russia: (Nizhny Novgorod Province); Europe, North Africa, Western Asia (Linsenmaier 1997, 1999).

REMARKS. Most of the specimens identified as *Holopyga gloriosa* (Fabricius, 1793) or *H. amoenula* Dahlbom, 1845 in Russian collections and Russian publications could be attributed to *H. inflammata* (Förster). More in general, almost all specimens previously identified as *H. gloriosa* belong to *H. inflammata* (Förster, 1853), *H. lucida* (Lepeletier, 1806) or the female of *H. jurinei* sensu Linsenmaier (1959). The name *Chrysis gloriosa* Fabricius, 1793 has been suppressed (ICZN, 1998).

***Holopyga jurinei* Chevrier, 1862**

Holopyga jurinei Chevrier, 1862: 95. Holotype – ♂ [not ♀], Switzerland [Geneva] (examined).

SPECIMENS EXAMINED. **Russia**: European part: Astrakhan Prov.: Dosang (MM); Rostov Prov.: Rostov State Nature Reserve (MM); North Caucasus: Krasnodar Terr.: vill. Sennoy (MM) [MMC].

DISTRIBUTION. *Russia (Astrakhan Province, Rostov Province, Krasnodar Territory). West-Palearctic: Europe, northern Africa, western Asia, Turkey (Linsenmaier 1997, 1999).

REMARKS. Some specimens identified as *H. amoenula* Dahlbom in old collections and in literature belong to this taxon. The holotype does not match neither Linsenmaier (1959) nor Kimsey & Bohart (1991) interpretation. We herewith follow Linsenmaier's (1959) interpretation of the species, waiting for a revision of the species in this group.

***Holopyga lucida* (Lepeletier, 1806)**

Hedychrum lucidum Lepeletier, 1806: 122. Syntypes – ♂, France (lost).

SPECIMENS EXAMINED. **Russia:** European part: Nizhny Novgorod Prov.: Nizhny Novgorod (MM); Rostov Prov.: Rostov State Nature Reserve (MM) [MMC]; Ural: Chelyabinsk Prov.: Ozersk [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Nizhny Novgorod Province, Rostov Province, Chelyabinsk Province); Central and southern Europe, Turkey (Linsenmaier 1968).

***Holopyga minuma* Linsenmaier, 1959**

Holopyga minuma Linsenmaier, 1959: 31. Holotype – ♀, Turkey: Niğde prov., Niğde [NMLS] (examined).

SPECIMENS EXAMINED. **Russia:** European part: Samara Prov.: Samara [ZIN].

DISTRIBUTION. *Russia (Samara Province); South-eastern Europe, Iran, Middle East, Turkey (Linsenmaier, 1968).

REMARKS. In Russian collections specimens of *Ho. minuma* were identified as *Ho. amoenula* Dahlbom.

Genus *Haba* Semenov, 1954

Haba Semenov, 1954: 143. Type species: *Holopyga almasyana* Mocsáry, 1911, by monotypy and original designation.

***Haba almasyana* (Mocsáry, 1911)**

Holopyga Almásyana Mocsáry 1911: 445. Lectotype – ♀ (designated by French in Bohart & French, 1986); Kyrgyzstan: Naryn [HNHM] (examined).

SPECIMENS EXAMINED. **Russia:** European part: Astrakhan Prov., env. Volzhsky (MM) [PRC].

DISTRIBUTION. *Russia (Astrakhan Province); Kyrgyzstan.

REMARKS. The genus *Haba* Semenov is newly recorded from Russia.

Genus *Hedychridium* Abeille de Perrin, 1878

Hedychridium Abeille de Perrin, 1878: 3. Type species: *Hedychrum minutum* Lepeletier, 1806 [= *Hedychridium ardens* (Coquebert, 1801)], by subsequent designation of Ashmead, 1902.

***Hedychridium adventicium* Zimmermann, 1962**

Hedychridium adventicium Zimmermann, 1962: 83. Syntypes – ♀♀, Austria: Burgenland, Neusiedl am See [NHMW] (examined) (*ardens* group).

SPECIMENS EXAMINED. **Russia:** European part: Kursk Prov., env. Kursk [ZIN]; Ural: Bashkir Rep., Vasil'evka [ZIN].

DISTRIBUTION. *Russia (Kursk Province, Bashkir Republic); Greece (Arens 2014), Turkey (Linsenmaier 1968).

REMARKS. Arens (2014) recently synonymised *Hedychridium viridisulcatum* Linsenmaier, 1968 with *H. adventicium* Zimmermann. This species may have a large distributional range, but it is very likely overlooked because of its small size.

***Hedychridium krajniki krajniki* Balthasar, 1946**

Hedychridium krajniki Balthasar, 1946: 237. Syntypes – 4 exx. (sex unknown); Slovakia: Parkan [JNMP] (*ardens* group).

SPECIMENS EXAMINED. **Russia:** European part: Mordovian Rep.: Mordovian State Nature Reserve [MMC]; Kursk Prov., Borisovka [ZIN]; Nizhny Novgorod Prov.: Nizhny Novgorod [MMC]; Ural: Orenburg Prov., Spasskoe [as *H. ardens* [ZIN]].

DISTRIBUTION. *Russia (Kursk Province, Mordovian Republic, Nizhny Novgorod Province, Orenburg Province); southern and Central Europe. In Turkey it occurs with the subspecies *Hedychridium krajniki turceyense* Linsenmaier, 1968.

***Hedychridium monochroum* du Buysson, 1888**

Hedychridium monochroum du Buysson, 1888: 3. Holotype – ♀, France: Marseille [MNHN] (*monochroum* group).

SPECIMENS EXAMINED. **Russia:** European part: Volgograd Prov.: Volgograd (MM); Ural: Chelyabinsk Prov.: Ozersk [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Volgograd Province, Chelyabinsk Province). Trans-Palaeartic from Europe to Armenia, southern Caucasus Uzbekistan, Tajikistan, and the Oriental Region (Rosa *et al.* 2017a).

REMARKS. Recently Rosa *et al.* (2017a) synonymised *Cyrteuchridium breviceps* Semenov, 1954 and *C. pusio* Semenov & Nikol'skaya, 1954 with *H. monochroum*, therefore this species is widespread in Central Asia, too.

***Hedychridium parkanense* Balthasar, 1946**

Hedychridium parkanense Balthasar, 1946: 238. Holotype – ♂, Slovakia: Štúrovo [JNMP].

SPECIMENS EXAMINED. **Russia:** European part: Astrakhan Prov.: Kirovskiy, steppe [ZIN]). **Ukraine:** Odessa, Kanev [ZIN].

DISTRIBUTION. *Russia (Astrakhan Province); Central-southern Europe: Slovakia, Hungaria, former Yugoslavia, *Ukraine.

REMARKS. Kilimnik labelled two specimens at ZIN as holotype and paratype of *Hedychridium leptos*, a never described species.

***Hedychridium mediocrum* Linsenmaier, 1987**

Hedychridium (Hedychridium) mediocrum Linsenmaier, 1987: 142. Holotype – ♂, Switzerland: Wallis [NMLS] (examined).

Hedychridium mediocrate Kimsey in Kimsey & Bohart 1991: 199. Unnecessary replacement name for *Hedychridium mediocrum* Linsenmaier, 1987: 142.

SPECIMENS EXAMINED. **Russia:** Ural: Chelyabinsk Prov.: Ozersk [P. Rudoiskatel coll.]; Orenburg Prov.: env. Orenburg [P. Rudoiskatel coll.]; Sverdlovsk Prov.: Yekaterinburg [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Chelyabinsk Province, Orenburg Province, Sverdlovsk Province); Central and Southern Europe.

REMARKS. This species was misidentified by Linsenmaier (1959) as *Hedychridium scutellare* (Tournier, 1878). Arens (2010) considered *H. mediocrum* Linsenmaier as the continental subspecies of *H. insulare* Balthasar, 1952.

***Hedychridium tsunekii* Linsenmaier, 1959**

Hedychridium tsunekii Linsenmaier, 1959: 60. Holotype – ♂, Korea [NMLS] (examined).

SPECIMENS EXAMINED. **Russia:** Far East: Khabarovsk Terr., Evoron Lake, 16.VII.2006, 1 ♀ (MP) [PRC].

DISTRIBUTION. *Russia (Khabarovsk Territory); Korea.

Subfamily Chrysidinae

Tribe Chrysidini

Genus *Chrysura* Dahlbom, 1845

Chrysura Dahlbom, 1845: 6. Type species: *Chrysis austriaca* Fabricius, 1804, by subsequent designation of Bodenstein, 1939.

***Chrysura koma* (Tsuneki, 1950)**

Chrysis koma Tsuneki, 1950: 65. Holotype – ♀, Korea: Kogendo [EIHU] (*radians* group).

SPECIMENS EXAMINED. **Russia:** Far East: Primorsky Terr., Gornotaezhnoe, 18.V.2016, 1 ♀ (VL) [IBSS]; Ussiriski Reserve, 20.VI.1940, 3 ♀ (A. Ivanov) [ZIN].

DISTRIBUTION. *Russia (Primorsky Territory); Korea.

Genus *Chrysis* Linnaeus, 1761

Chrysis Linnaeus, 1761: 414. Type species: *Sphex ignita* Linnaeus, 1758, by subsequent designation of Latreille, 1810.

***Chrysis tenella* Mocsáry, 1889**

Chrysis tenella Mocsáry, 1889: 197. Holotype – ♂ [not ♀], Caucasus [ISEA] (examined) (*millenaris* group).

SPECIMENS EXAMINED. **Russia:** European part: Dagestan Rep., Kuma River [PRC].

DISTRIBUTION. *Russia (Dagestan Republic).

REMARKS. Species previously known only for “Caucasus” without any precise locality.

***Chrysis albanica* Trautmann, 1927**

Chrysis succincta var. *albanica* Trautmann, 1927: 160. Holotype – ♀, Albania (lost) (*succincta* group).

SPECIMENS EXAMINED. **Russia:** European part: Astrakhan Prov.: Dosang (MM); Volgograd Prov.: Sarepta [ZIN]; Stavropol Terr.: Stavropol [ZIN]; Crimea:

Sevastopol [ZIN]); Ural: Orenburg Prov., V. Dneprovka [ZIN]; env. Orenburg [P. Rudoiskatel coll.], Samara Prov.: Samara [ZIN]). **Georgia:** Kodzhori [ZIN]

DISTRIBUTION. *Russia (Volgograd Province, Stavropol Territory, Crimea, Orenburg Province); Caucasus, Georgia, South-east Europe (Linsenmaier 1959).

REMARKS. Specimens found in ZIN were previously identified as *C. succincta* Linnaeus, 1767, *C. frivaldszkyi* Mocsáry, 1882 and *C. gribodoi* Abeille de Perrin, 1877. In Vinokurov's articles on Caucasus (Vinokurov, 2006, 2009) it was identified as *C. succincta* Linnaeus.

***Chrysis mokrousovi* Rosa, sp. n.**

Figs 5A–F, 6A–F, 7C–D

SPECIMENS EXAMINED. Holotype – ♀, **Russia:** Abkhazia Rep.: Gudautskii Distr., env. Novy Afon, 3.VI 2010 (MM) [ZIN]. Allotype: same data, 9.VI 2010 [ZIN]. Paratypes: **Russia:** North Caucasus: Krasnodar Terr., Sochi, Lazarevskoe, 26.V 1976, 1♀ (V.I. Tobias); same locality and collector, 19.VI 1976, 1♀; same locality and collector, 23.VI 1976, 1♂ [PRC].

DIAGNOSIS. *Chrysis mokrousovi* Rosa, sp. n. belongs to the *succincta* species-group and is morphologically similar to *C. illigeri* Wesmael, 1839. The female can be easily separated through body coloration: lower face (in frontal view), genae and oral fossa to occiput (in ventral view), mesosoma and legs metallic red (Fig. 7C); mesopleuron with greenish or bluish reflections (Fig. 5B); T3 apical margin bluish to black (Fig. 5D, 5E) (*C. illigeri* has a typical coloration pattern of *C. succincta*, with head and mesosoma blue and anterior margin of pronotum and mesoscutum metallic red). The male has green head, green to blue propodeum and T3 entirely metallic red, including the posterior margin; anyway, the red coloration of mesosoma is distinctly characterized when compared with the coloration of *C. illigeri* male (coloration pattern of *C. succincta*). Besides the coloration, the male can be separated by the different shape of genitalia, with straight internal margin of gonocoxae (Figs 6F, 6G).

DESCRIPTION. Body length 5.5–7.0 mm. Fore wing length 3.5–4.0 mm. *Female*. OOL = 1.9 MOD; POL = 1.8 MOD; MS = 1.6 MOD; relative length of P : F1 : F2 : F3 = 1.0 : 1.5 : 0.7 : 0.7.

Head. Vertex and frons with relatively small and contiguous punctures; TFC barely raised, medially straight, and slightly downcurved at both ends (in the holotype slightly raised only medially (Fig. 5A)); scapal basin widely polished in the upper third; medially polished (about 2 MOD width); laterally punctate, in the lower two thirds, with minutes punctures; subantennal space about 1.0 MOD; anterior margin of clypeus medially slightly emarginated, laterally with thickened brownish rim; in frontal view, malar spaces convergent. Genal carina fully developed to mandible.

Mesosoma. Pronotal groove deep and narrow, almost reaching 2/3 of pronotum length (Fig. 7C); in dorsal view, punctuation all over mesosoma similar, with coarse and contiguous punctures of different size (Fig. 7C); anterior margin of mesoscutellum medially impunctate and darker to purplish; propodeal teeth slightly divergent (Fig. 7C). Mesopleuron with episternal sulcus formed by deep, large foveate punctures (Fig. 5B).

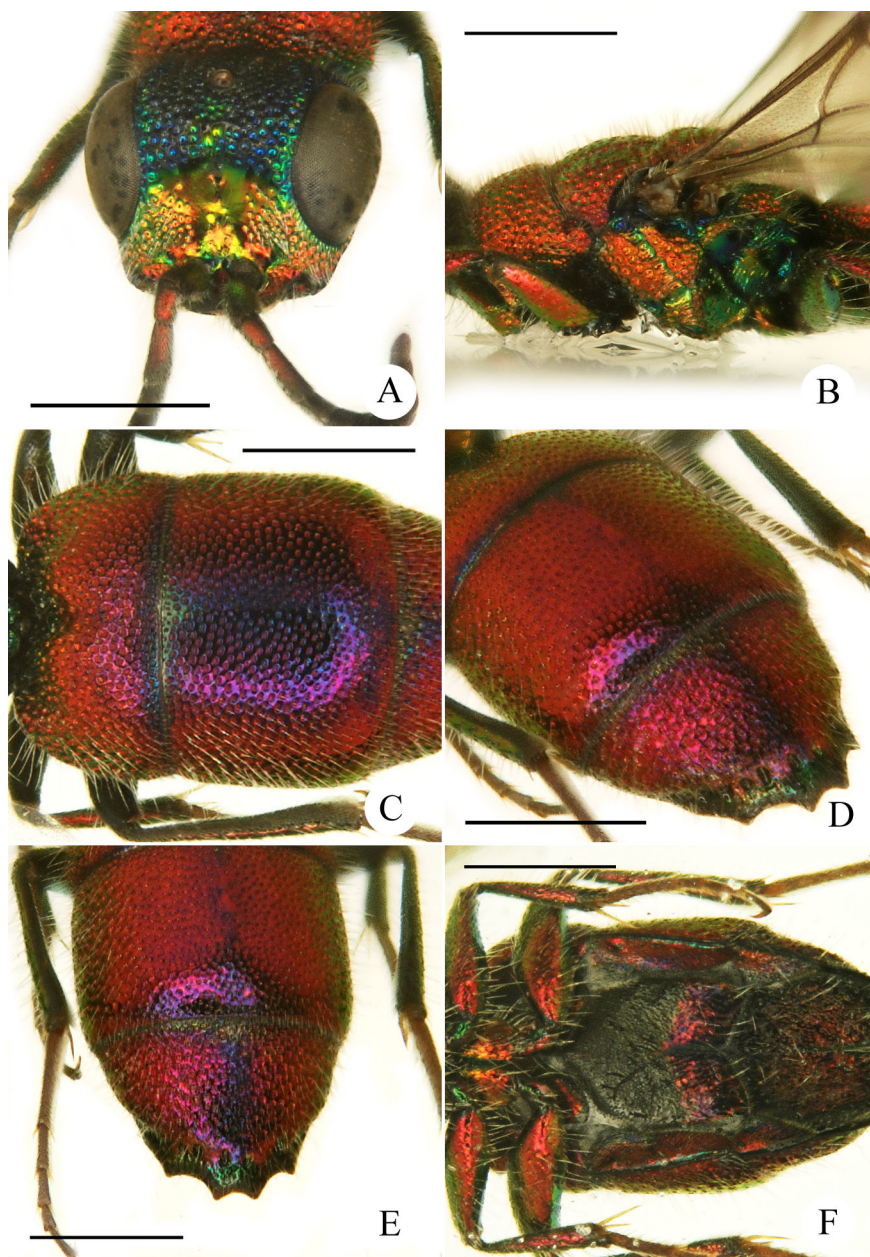


Fig. 5. *Chrysis mokrousovi* sp. n., holotype, ♀: A – head, frontal view; B – mesosoma, lateral view; C – metasoma, dorsal view; D – metasoma, postero-lateral view; E – metasoma, posterior view; F – metasoma, ventral view. Scale bar = 1.0 mm.

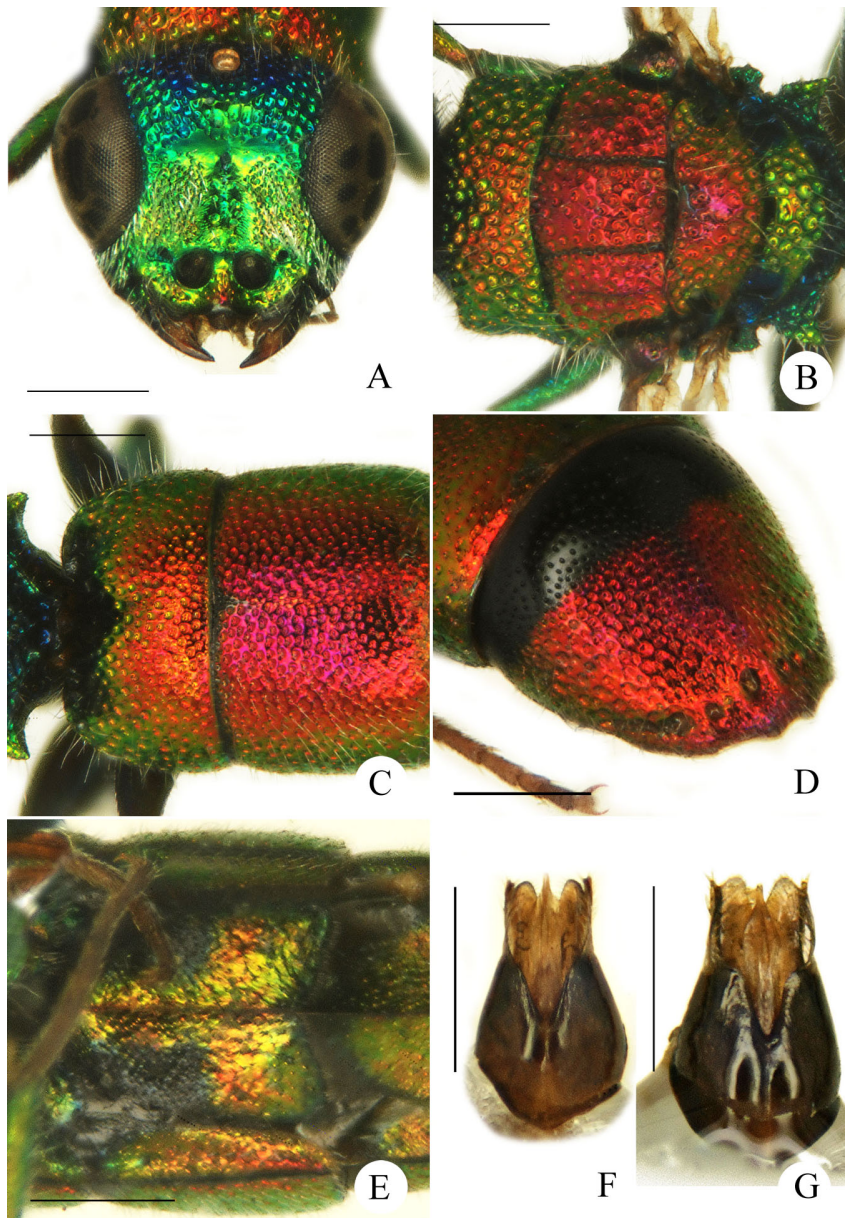


Fig. 6. A–F – *Chrysis mokrousovi* sp. n., paratype, ♂, Sochi. G – *C. illigeri*. A – head, frontal view; B – mesosoma, dorsal view; C – metasoma, dorsal view; D – metasoma, postero-lateral view; E – metasoma, ventral view; F, G – genital capsule. Scale bar for A–E = 1.0 mm, F, G = 0.5 mm.

Metasoma. Punctuation on T1 dense with contiguous punctures of different size; on T2 with geminate punctures of the same size, more spaced (1 PD apart) with polished intervals (Fig. 5C); on T3 with irregular, contiguous and corrugated punctures; pit row with deep and elongate pits (Fig. 5D); T3 apical margin with four short apical teeth (Fig. 5E); medial teeth on posterior margin of T3 extending further posteriorly than lateral teeth, and located in close proximity.

Coloration. Body entirely metallic red flame, excluding blue frons, vertex and partly genae; bluish to green sulci and alar foveae on mesopleuron; purplish to black apical margin of T3, after pit row. In some paratypes propleuron, lower mesopleuron and metapleuron bluish. Black spots on S2 covering 2/3 of the sternite length, not strongly oblique posteriorly (similarly to *C. illigeri*). Tegulae brown, without metallic reflections; tarsi dark brown; scape, pedicel and F1 metallic red, rest of flagellum black. Hind wings smoky.

Vestiture. Body with whitish, short, erect setae (1.0–1.5 MOD) laterally and ventrally longer (up to 2.0 MOD). Legs with erect whitish setae, shorter on foretibiae (1.0 MOD), longer on mid- and hindtibiae (up to 2 MOD).

Male. Similar to female, but scapal basin laterally extensively punctate, with short, silvery appressed setae; head metallic green; T3 entirely metallic flame red, including apical margin; T3 apical teeth short and blunted as in *C. illigeri* (Fig. 6D); tegulae basally metallic; S2 black spots small and subrectangular (Fig. 6E), medially broadly separated, as long as half of sternite length. Genital capsule similar to *C. illigeri* but with straight internal margin of gonocoxae.

DISTRIBUTION. Russia (Krasnodar Territory), Abkhazia Republic.

ETYMOLOGY. The specific epithet *mokrousovi* (masculine name in genitive case) is named after Mikhail Mokrousov (Nishny Novgorod, Russia), who collected and donated the holotype to ZIN.

***Chrysis vinokurovi* Rosa, sp. n.**

Figs 7A, 8A–F

SPECIMENS EXAMINED. Holotype – ♀, **Russia**: North Caucasus: Stavropol Terr., Mineralnye Vody, St. Podkumok, 2.VIII 2006 (N. Vinokurov) [ZIN].

DIAGNOSIS. *Chrysis vinokurovi* sp. n. is a remarkable species, one of the largest in the *succincta* species-group (10 mm long). It shows the body coloration of *C. gribodoi spilota* Linsenmaier, 1959 (Fig. 7A), with typical coloration pattern of *C. succincta* and purple-blackish spots on T1 and T2. Nevertheless, it can be easily separated for the peculiar tridentate apical margin of T3 (Fig. 8E) and the black spots on S2, covering most of the sternite length (Fig. 8F). This tridentate apical margin is observed in the Cypriot endemism *C. mavromoustakisi* Trautmann, 1929 (Fig. 7B) too. The new species differs from *C. mavromoustakisi* by body coloration (mesosoma largely metallic red in *C. mavromoustakisi*) and metasoma punctuation, with small and dense punctures (vs. large, foveate and contiguous in *C. mavromoustakisi*). *Chrysis vinokurovi* sp. n. belongs to the same subgroup of *C. gribodoi* Abeille de Perrin, 1877, *C. cohaerea* Linsenmaier, 1959 and *C. pseudogribodoi* Linsenmaier, 1959. It is separated from these relative species through shape of T3, black spots on S2 and punctuation of metasoma.

DESCRIPTION. Body length 10.0 mm. Fore wing length 6.0 mm. *Female*. OOL = 1.8 MOD; POL = 2.4 MOD; MS = 1.0 MOD; relative length of P : F1 : F2 : F3 = 1.0 : 1.5 : 0.8 : 0.7.

Head. Vertex and frons with small, contiguous punctures; TFC irregular, barely raised on interspaces among punctures, thus appearing double and with ramifications (Figs 7A, 8A); scapal basin medially polished and laterally punctate, with minute and dense punctures; subantennal space about 1.0 MOD; anterior margin of clypeus medially emarginate, laterally with thickened brownish rim; in frontal view, malar spaces slightly convergent. Genal carina fully developed to mandible.

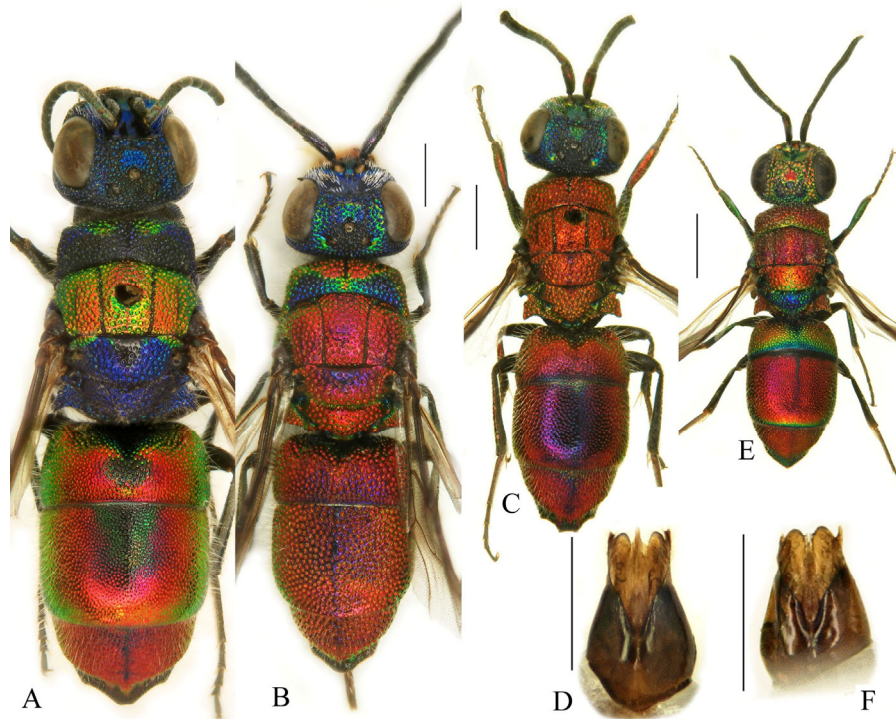


Fig. 7. A – *Chrysis vinokurovi* sp. n., holotype, ♀; B – *C. mavromoustakisi* Trautmann, ♀, Cyprus; C, D – *C. mokrousovi* Rosa, sp. n. (C – holotype, ♀; D – paratype, ♂); E, F – *C. lyda* sp. n. (E – holotype, ♀; F – paratype, ♂). A–C, E – habitus, dorsal view; D, F – genital capsule. Scale bar for A–C, E = 1.0 mm, D, F = 0.5 mm.

Mesosoma. Pronotal groove relatively deep and wide, almost reaching 2/3 of pronotum length; punctuation on pronotum with small, contiguous punctures; on mesoscutum with punctures of larger size, increasing in size towards posterior margin; on mesoscutellum and metascutellum with minute punctures on interspaces; mesoscutellum antero-medially impunctate and with minute punctures, darker to black; propodeal teeth divergent (Fig. 7A). Episternal and scrobal sulci with deep, foveate punctures (Fig. 8B).

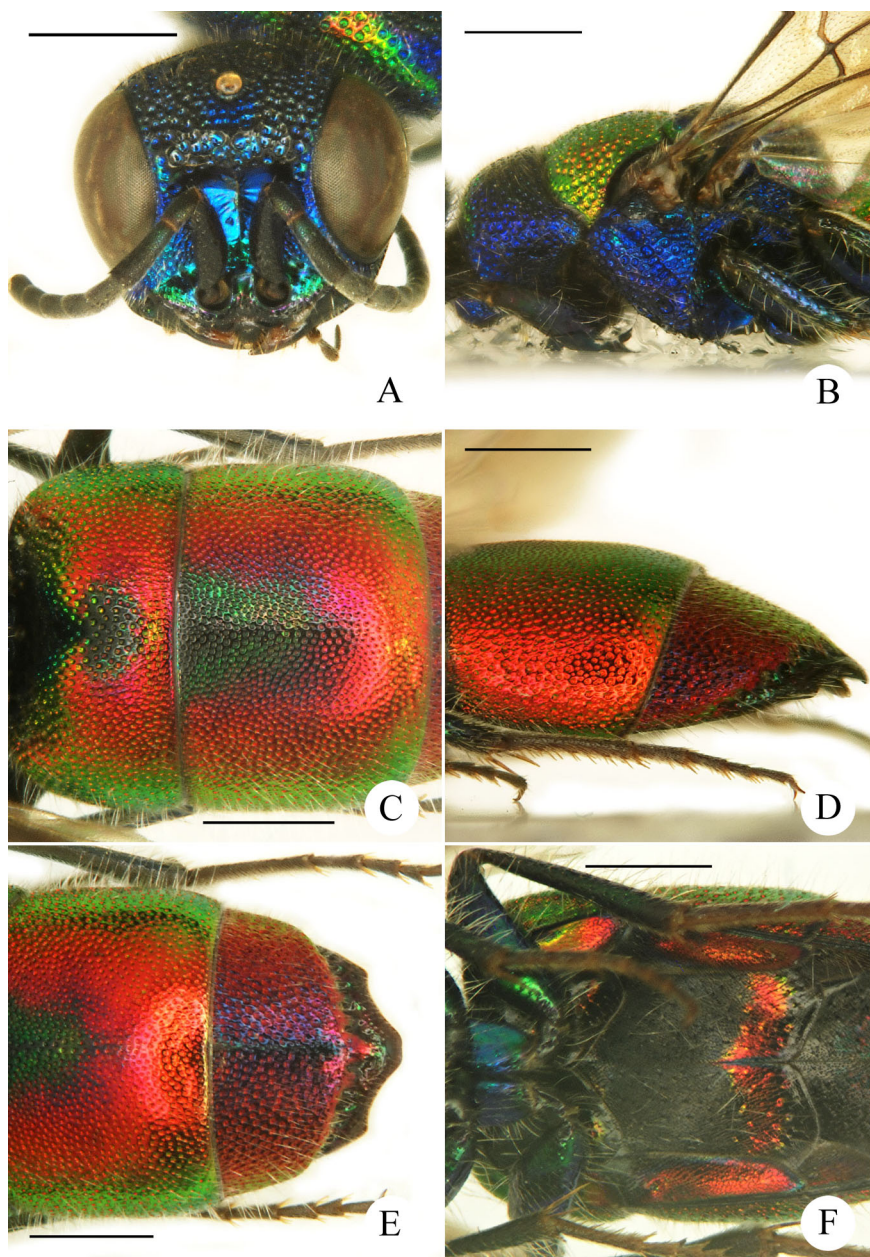


Fig. 8. *Chrysis vinokurovi* sp. n., holotype, ♀: A – head, frontal view; B – mesosoma, lateral view; C – metasoma, dorsal view; D – metasoma, lateral view; E – T3, dorsal view; F – metasoma, ventral view. Scale bar = 1.0 mm.

Metasoma. Punctuation on T1 with small punctures, 1 PD apart (Fig. 8C); postero-laterally and laterally double, with minute punctures on interspaces; on T2 dorsally denser (< 1 PD apart) (Fig. 8C), laterally double and more spaced (1–2 PD apart), with larger and lacunose punctures (Fig. 8D); on T3 with larger punctures contiguous and bearing long, whitish setae; pit row with deep and elongate pits; median teeth on apical margin of T3 fused, as a result apical margin appears tridentate (Fig. 8E); this median tooth extending further posteriorly than lateral teeth; lateral teeth as blunted corners (Fig. 8D).

Coloration. Body colour as in *Chrysis succincta* Linnaeus, with metallic blue head and mesosoma; red to golden red on anterior margin of pronotum, mesoscutum, antero-lateral corners of mesoscutellum; metasoma red with antero-median dark purplish spot on T1 and T2; apical margin of T3, after pit-row, dark purple to black. Black spots on S2 large and medially fused, covering 4/5 of sternite and not strongly oblique posteriorly. Tegulae dark brown, without metallic reflections; tarsi dark brown; scape, pedicel and F1 basally metallic green, rest of flagellum black. Hind wings smoky.

Vestiture. Body covered with whitish, short, erect setae (1.0 MOD), laterally longer (up to 1.5 MOD); laterally on T3 up to 2.0 MOD. Legs with erect, whitish setae, shorter on foretibiae (1.0 MOD), longer on mid- and hindtibiae (up to 1.5 MOD).

Male. Unavailable for this study.

DISTRIBUTION. Russia (Stavropol Territory).

ETYMOLOGY. The specific epithet *vinokurovi* (masculine name in genitive case) is named after Nikolaj B. Vinokurov (Mineralnye Vody, Russia), who collected the holotype.

REMARKS. This species was misidentified by Vinokurov (2013) as *Chrysis mavromoustakisi* Trautmann, 1929.

***Chrysis grohmanni krkiana* Linsenmaier, 1959**

Chrysis (*Chrysis*) *grohmanni krkiana* Linsenmaier, 1959: 109. Holotype – ♀, Croatia: Krk Is. [NMLS] (examined) (*succincta* group).

SPECIMENS EXAMINED. **Russia**: Volgograd Prov.: Volgograd [P. Rudoiskatel coll.]; Krasnodar Terr.: vill. Sennoy (MM) [MMC].

DISTRIBUTION. *Russia (Volgograd Province, Krasnodar Territory); South-eastern Europe from Italy to Greece and Bulgaria.

REMARKS. All published records of *Chrysis grohmanni* Dahlbom, 1854 for Russia are linked to this (sub)species or other similar species in this species group (e.g. *C. kolazyi* Mocsáry, 1889), whereas the nominal subspecies is distributed in the western Mediterranean basin.

***Chrysis auriceps* Linsenmaier, 1959**

Chrysis auriceps Linsenmaier, 1959: 119. Lectotype – ♀ (designated by Rosa *et al.* 2015b: 524); Croatia: Krk Isl. [NMLS] (examined)

SPECIMENS EXAMINED. **Russia**: Ural: Chelyabinsk Prov.: Ozersk [P. Rudoiskatel coll.]; Orenburg Prov., env. Orenburg [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Chelyabinsk Province, Orenburg Province); Southern Europe, Middle East, Turkey (Linsenmaier 1968).

***Chrysis lyda* Rosa, sp. n.**

Figs 7E–F, 9A–F

SPECIMENS EXAMINED. Holotype – ♀, **Russia**: Krasnodar Terr., vill. Sennoy, 25.VI 2012 (MM) [ZIN]. Paratypes: Stavropol Terr., Mineralnye Vody, St. Podkumok, white pan trap, 26–29.VI 2006, 1♂, 1♀ (N. Vinokurov); env. Kizlovodsk, 4.VIII 2006, 1♂, 1♀ (N. Vinokurov); env. Kizlovodsk, St. Podkumok, 21.VI 2006, 1♀ (N. Vinokurov); Abkhazia Rep., env. Pitsunda, 13.VI 2010, 1♀ (MM) [ZIN].

DIAGNOSIS. *Chrysis lyda* sp. n. belongs to the *leachii* species-group. It is related to *C. aegeica* Arens, 2016, recently described from the Cyclades Islands (Santorini and Ios). It can be separated from the latter through body coloration, with metascutellum blue contrasting with the rest of mesosoma (Fig. 9D) (vs. concolour in *C. aegeica*), T1 and T2 posteriorly with a blue margin (Fig. 9E) (vs. concolour); it is morphologically separated through slender body (vs. robust, compare pictures in Arens 2016), with narrow pronotum (vs. larger and subrectangular with subparallel anterior sides); sculpture of scapal basin, with peculiar double oriented wrinkles (Fig. 9A) (vs. weakly wrinkled, almost polished): wrinkles orientation, on lower scapal basin, may vary in some specimens, being more or less horizontal or concave. Male genitalia are similar to *C. verhoeffi* Linsenmaier, 1959 (known from Corfu and continental Greece) and *C. ignescoa* Linsenmaier, 1959 (Cypriot endemism). It can be separated from these two species by coloration (similar to *C. leachii* Shuckard, 1837 in the other two species). The body coloration is similar to *C. ignigena* Linsenmaier, 1959 (Cypriot endemism), but the latter has different male genitalia (Linsenmaier 1959: Fig. 338). The fully metallic red pronotum, mesoscutum and mesoscutellum is also observed in *C. cypruscola* Linsenmaier, 1959 (Cypriot endemism), which is distinct for head, tegulae, propodeum and T1 medially blue, and shape of male genitalia (Linsenmaier 1959: Fig. 339).

DESCRIPTION. Body length 4.5–6.0 mm. Fore wing length 2.8–4.0 mm. *Female*. OOL = 1.5 MOD; POL = 1.8 MOD; MS = 1.5 MOD; relative length of P : F1 : F2 : F3 = 1.0 : 1.5 : 0.8 : 0.7.

Head. Vertex and frons with large (up to 0.8 MOD), irregular and contiguous punctures; in some specimens with areolate-reticulate punctures, even partially fused; TFC faint. Scapal basin finely microridged: in the holotype microridges have two orientations, arched downwards in the upper part and opposite directed in the lower part (in some specimens lower scapal basin may be medially polished or with subparallel microridges); anterior margin of clypeus medially slightly emarginated; subantennal space less than 1 MOD; malar spaces convergent. Genal carina fully developed to mandible.

Mesosoma. Pronotal groove weak and broad, almost reaching 2/3 of pronotum length; punctuation on mesosoma irregular, with punctures of different size, mostly contiguous with narrow interspaces (Fig. 9C); propodeal teeth acute and divergent. Episternal sulcus with deep, subrectangular to subsquare foveate punctures (Fig. 9B), often metallic green in contrast with red coloration of mesopleuron.

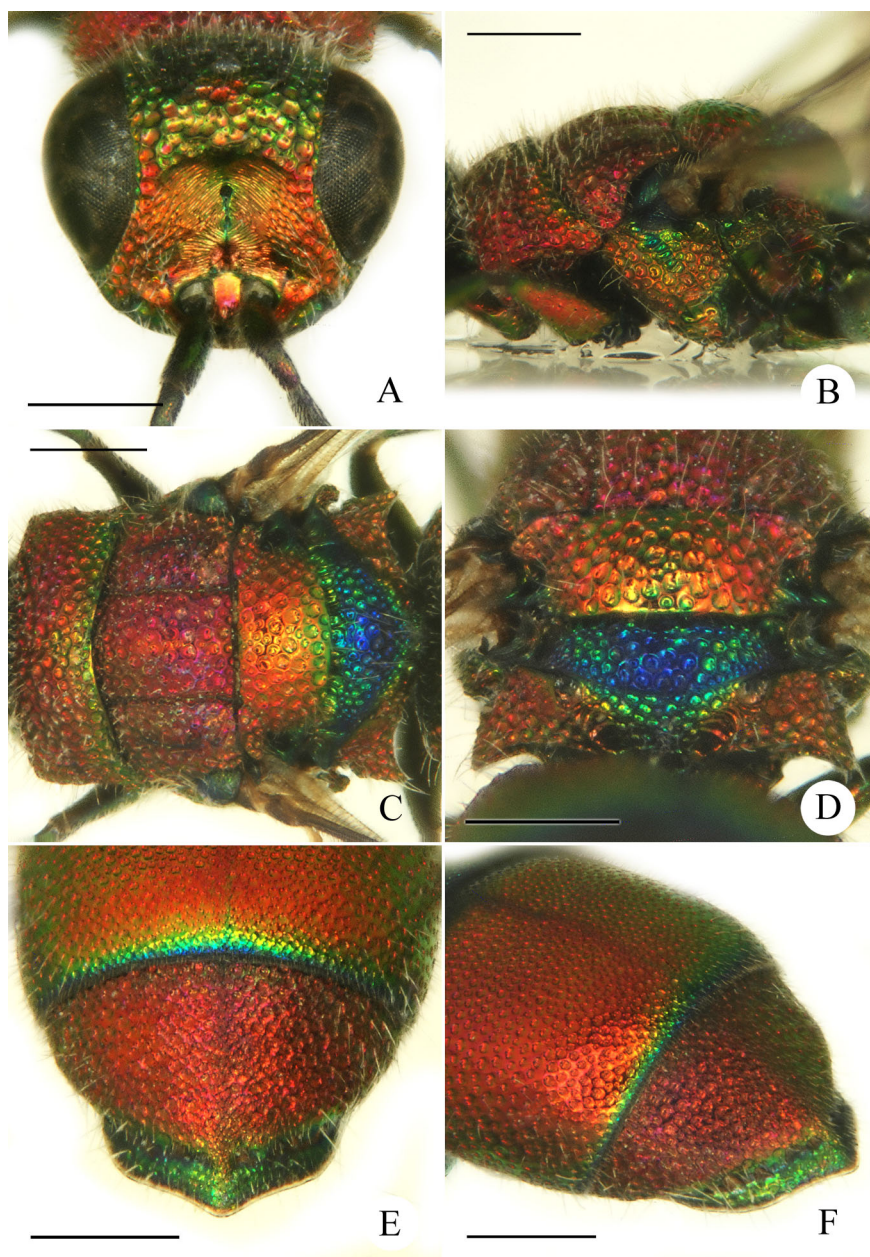


Fig. 9. *Chrysis lyda* sp. n., holotype, ♀: A – head, frontal view; B – mesosoma, lateral view; C – mesosoma, dorsal view; D – mesosoma, detail; E – T3, dorsal view; F – metasoma, dorso-lateral view. Scale bar = 0.5 mm.

Metasoma. Punctuation on T2 with small punctures (Fig. 7E), becoming larger and scattered (up to 1PD apart) laterally (Fig. 9F); pit-row with pits of variable size: in the holotype and some paratypes pits are round, small, brown without metallic colour. Apical margin of T3 with a small median denticle, more or less protruding in paratypes.

Coloration. Coloration pattern: body metallic red (Fig. 7E); green to blue on metascutellum and propodeum medially (dorsal area of the metapectal-propodeal complex) (Fig. 9D). Minor variations between holotype and paratypes are observed: head, posterior margin of pronotum, mesoscutellum, mesonotum and metanotal trough, tegulae legs, posterior margin of T1 and T2, apical margin of T3 after pit-row usually red or with golden-greenish reflections. Black spots on S2 large and medially fused, covering 4/5 of sternite, posteriorly parallel to sternite margin. Sternites dark purple to blackish, in one paratypes purple-red. Scape, pedicel and F1 basally metallic red, rest of flagellum black. Wings hyaline, smoky in radial cell.

Vestiture. Body covered with brownish to whitish, short, erect setae (1.0 to 1.5 MOD), laterally 1.5 MOD. Legs with erect brownish to whitish setae (1.0 MOD), longer on femora (up to 2 MOD).

Male. Propodeum entirely green to blue, including propodeal teeth, whereas in female only median part of propodeum is green to blue. Some male paratypes show small colour differences as in female. Genitalia as in Fig. 7F.

DISTRIBUTION. Russia (Krasnodar Territory, Stavropol Territory), Abkhazia Republic.

ETYMOLOGY. The specific name *lyda* (feminine noun, nominative case) is named after Lydia Vinokurova (Mineralnye Vody, Russia).

REMARKS. Vinokurov (2011) identified this species as *C. excursa* Linsenmaier, 1959, which is a Northern African species well distinct through the uniform coppery body coloration and the undulate apical margin of T3, a unique feature in this species-group.

***Chrysis daphnis daphnis* Mocsáry, 1889**

Chrysis (*Gonochrysis*) *daphnis* Mocsáry in Radoszkowski, 1889: 17. Syntypes – ♂♂; Italy: Sicily [ISEA] (examined) (*viridula* group).

SPECIMENS EXAMINED. **Russia**: European part (*Crimea*: Simferopol [sub *C. viridula*, ZIN]).

DISTRIBUTION. *Russia (Crimea). Southern Europe, Northern Africa.

REMARKS. Specimens of *Chrysis daphnis* Mocsáry were confused and mixed with *C. viridula* Linnaeus, 1767. *C. daphnis* can be recognized by elongate pronotum, shape of genital capsule (Linsenmaier 1959), short and appressed setae on mid and hind tibiae (vs. long and erect setae in *C. viridula*).

***Chrysis terminata* Dahlbom, 1854**

Chrysis terminata Dahlbom, 1854: 261. Holotype – ♂, Austria [NHMW] (examined) (*ignita* group).

SPECIMENS EXAMINED. **Russia**: European part: Volgograd Prov.: Sarepta [NMLS]); Ural: Orenburg Prov.: env. Orenburg [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Volgograd Province, Orenburg Province). West-Palaearctic from Europe to central Asia (Paukkunen *et al.* 2014).

REMARKS. Specimens of *Chrysis terminata* Dahlbom are usually common in collections, but confused with *C. ignita* (Linnaeus, 1758).

***Chrysis sooni* Rosa, sp. n.**

Figs 10A–H, 11A–F

SPECIMENS EXAMINED. Holotype – ♀, **Russia**: Far East: Primorsky Terr., Novokachalinsk, 21.VIII 2009 (AL, MP, VL) [ZIN]. Paratype: Primorsky Terr., Yakovlevsky distr., Pritsepilovka, 10.VII 2004, 1 ♀ (A. Gerasimenko) [PRC].

DIAGNOSIS. *Chrysis sooni* sp. n. is an outstanding species of the *ignita* species-group. It is morphologically distinct from all the other known species. In particular, the shape of black spots medially fused on S2 is unique (Fig. 11F), as well as the shape of T3 with pits of the pit row deep, wide, partially fused and shining; typical are also apical teeth prolonged, with median pair round at apex (Fig. 11E). We assign this species to the *C. indigotea* subgroup (*sensu* Linsenmaier, 1959; Soon & Saarma, 2011) for: short and thick ovipositor, with ovoid membranaceous terga (Fig. 10B–I), similar to *C. obtusidens* Dufour & Perris, 1840; shape of internal sternites and tergites, with short chitin fork, and the broaden tri-lobed shape of T6. The closer species is *C. obtusidens* for: general habitus (Fig. 10A); black colour, lusterless, of mesoscutum median lobe; metasoma punctuation and spurs of midtibia, with outer spur double as long as inner spur. Nevertheless, *C. sooni* can be easily separated through shape of T3 (in *C. obtusidens* pits of the pit row are small, well separated; apical teeth of T3 are short and obtuse); metasoma ventrally metallic blue with black spots medially fused (in *C. obtusidens* metasoma ventrally metallic red with black spots separated).

DESCRIPTION. *Female*. Body length 8.3–10.0 mm. Fore wing length 5.0–6.0 mm. OOL = 1.8 MOD; POL = 1.9 MOD; MS = 1.0 MOD; relative length of P : F1 : F2 : F3 = 1.0 : 1.6 : 1.0 : 0.9.

Head. Vertex and frons with relatively small (0.2–0.4 MOD) and contiguous punctures; with two impunctate and polished areas laterally to posterior ocelli; area between frons and midocellus with a small and shallow depression; TFC well developed, raised and medially straight, with curved endings continue along eye margin; scapal basin fully sculptured, with fine wrinkles interspersed with minute punctures from medial line to eye margin (Fig. 11A); subantennal space less than 1.0 MOD. Mandible simple, without subapical tooth; in lateral view thick (1.0 MOD).

Mesosoma. Pronotal groove deep, broad, reaching 2/3 of pronotum length; pronotum with punctures of different size, on average larger than those on vertex, with minute punctures on narrow interspaces; punctuation on mesoscutum scattered, with larger punctures on median lobe and with minute punctures on interspaces; mesoscutellum medially with scattered large punctures, partially impunctate (Fig. 10A), laterally with small punctures on interspaces; metascutellum with large, round, deep

foveate punctures; propodeal teeth large, outer edge straight and subparallel (Fig. 10A); mesopleuron in the upper half with broadened episternal sulcus, decreasing towards scrobal sulcus.

Metasoma. Punctures on T1 small, as large as punctures on vertex, scattered (1–4 PD apart), with interspaces densely micropunctate (Fig. 11C); punctures on T2 smaller, about half size as large as punctures on T1 (Fig. 11C), closer (1 PD apart) and sub-equal in size, becoming smaller towards posterior margin, denser on lateral margins, with minute punctures on interspaces; T2 longitudinal carina faint; T3 with small and dense punctures; weak transverse pre-pit swelling (Fig. 11D); pits of the pit row round, noticeably large and deep, somewhere confluent, shining, contrasting with sternite color and sculpture (Fig. 11E); apical margin of T3 with four teeth: lateral teeth triangular and pointed; median teeth round at apex; interval between median teeth smaller than interval between inner and lateral tooth (Fig. 11E). Black spots on S2 round, medially fused, covering less than half of sternite length (Fig. 11F); S3 fully black.

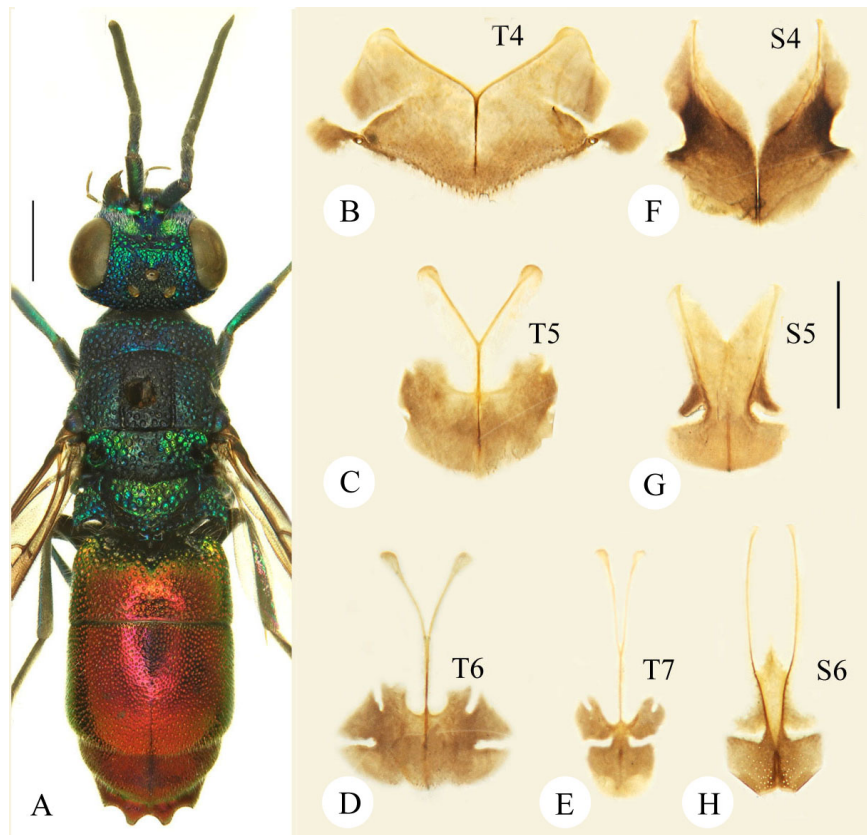


Fig. 10. *Chrysis sooni* sp. n., holotype, ♀: A – habitus; B–H – internal sterna and terga. Scale bar for A = 1.0 mm, for B–H = 0.5 mm.

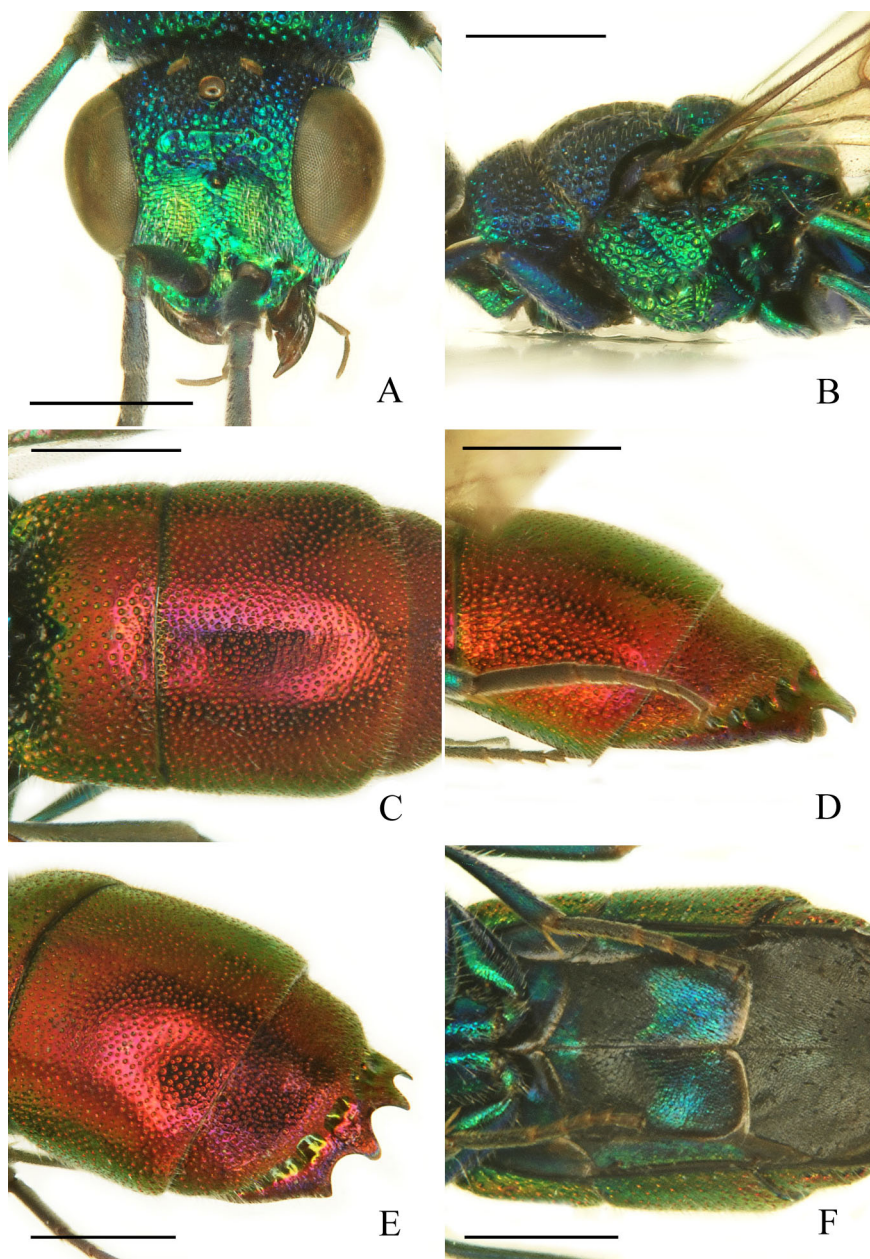


Fig. 11. *Chrysis sooni* sp. n., holotype, ♀. A – Head, frontal view. B – Mesosoma, lateral view. C – Metasoma, dorsal view. D – Metasoma, lateral view. E – Metasoma, dorso-lateral view. F – Metasoma, ventral view. Scale bar = 1.0 mm.

Coloration. Face and part of frons metallic green, lusterless on ocelli area, vertex and rest of head blue. Pronotum dark blue except green anterior margin; medial lobe of mesoscutum lusterless blackish, laterally dark blue; mesoscutellum antero-basally and postero-basally lusterless black, laterally green; metascutellum green; propodeum blue to light blue on propodeal teeth. Metasoma slightly green at base of T1, the rest of metasoma metallic red to purplish; pits of pit row on T3 bright; metasoma ventrally blue, S3 black.

Vestiture. Body with whitish, short, erect setae (1.0–1.5 MOD).

Male. Unknown.

DISTRIBUTION. Russia (Primorsky Territory).

ETYMOLOGY. The specific epithet *sooni* (masculine name in genitive case) is named after Villu Soon (Tartu, Estonia), renowned expert of Chrysididae.

***Chrysis clarinicornis* Linsenmaier, 1951**

Chrysis ignita var. *clarinicornis* Linsenmaier, 1951: 77. Lectotype – ♀ (designated by Linsenmaier 1959: 154); Switzerland: Wallis [NMLS] (examined) (*ignita* group).

SPECIMENS EXAMINED. **Russia:** European part: Kalmyk Rep.: vill. Khulkhuta (MM) [MMC]; Ural: Chelyabinsk Prov.: Ozersk [P. Rudoiskatel coll.].

DISTRIBUTION. *Russia (Kalmyk Republic, Chelyabinsk Province). West-Palearctic: southern and Central Europe, northern Africa (Linsenmaier 1997).

REMARKS. *Chrysis bianchii* Semenov, 1892 from Turkmenistan is very similar to *C. clarinicornis* Linsenmaier, 1951 and the latter could be a synonym. Only minor differences can be observed between the types; in *C. bianchii*, TFC is M-shaped (continuous and gently down-curved in *C. clarinicornis*); pronotum is without deep antero-median groove (with deep groove in *C. clarinicornis*); punctuation even on T1 with dense punctures (largely interspaced in *C. clarinicornis*). Additional specimens of *C. bianchii* are needed for the evaluation of this taxon.

***Chrysis inaequipunctata* Bischoff, 1910**

Chrysis inaequipunctata Bischoff, 1910: 462. Lectotype – ♀ (designated by Bohart in Kimsey & Bohart, 1991: 422); Uzbekistan: Buchara [MNHU] (*ignita* group).

SPECIMENS EXAMINED. **Russia:** European part: Udmurt Rep., Maigan [ZIN].

DISTRIBUTION. *Russia (Udmurt Republic), Uzbekistan.

***Chrysis daphne* Smith, 1874**

Chrysis daphne Smith, 1874: 399. Holotype – ♀, Japan: Hiogo [NHML] (*smaragdula* group).

SPECIMENS EXAMINED. **Russia:** Far East: Primorsky Terr., Nakhodka, “Vostok” Scientific Station, 9.IX 2009, 1 ♀ (I. Nesmelov) [IBSS].

DISTRIBUTION. *Russia (Primorsky Territory), Japan.

REMARKS. Specimens published as *C. fasciata* Olivier, 1791 from Russian Far East very likely belong to *Chrysis daphne* Smith, 1874. *C. daphne* has been consi-

dered as subspecies (Linsenmaier, 1959) or synonym (Kimsey & Bohart, 1991) of *C. fasciata* but unpublished molecular studies suggest that *C. daphne*, as well as *C. zetterstedti* Dahlbom, 1845, represent different species in relation to *C. fasciata* (Paukkunen *et al.*, 2014). Also from a morphological point of view, they show differences which support their separation. In particular *C. daphne* is easily recognizable by the elongate pit row on T3 and the shortened black spots on S2.

***Chrysis equestris* Dahlbom, 1854**

Chrysis equestris Dahlbom, 1854: 307. Holotype – ♀, locality unknown (most likely Sweden) [NHRS] (examined) (*smaragdula* group).

SPECIMENS EXAMINED. **Russia:** *Far East: Primorsky Terr.: Lazovskyi Nature Reserve, Ta-Chingouza, 1.X 2002, 1 ♀ (D. Kochetkov) [IBSS]; idem, America, 25.VIII–3.IX 2006, 1 ♀ (Yu. Sundukov, V. Shokhrin) [IBSS].

DISTRIBUTION. Russia (Belgorod Province, Penza Province, Saratov Province, Tatar Republic, Chelyabinsk Province, Orenburg Province, Primorsky Territory). West-Palaearctic, from West Europe to southern Russia (Linsenmaier 1997).

Subfamily Chrysidinae

Tribe Parnopini

Genus *Parnopes* Latreille, 1797

Parnopes Latreille, 1797: 126. Type species: *Chrysis carnea* Fabricius, 1775 [= *Parnopes grandior* (Pallas, 1771)], by monotypy.

***Parnopes glasunowi* Semenov, 1901**

Parnopes glasunowi Semenov, 1901: 25. Holotype – ♂, Tajikistan: Jagnob [ZIN] (examined).

SPECIMENS EXAMINED. **Russia:** European part: Kalmyk Rep.: vill. Khulkhuta (MM) [MMC].

DISTRIBUTION. *Russia (Kalmyk Republic); Central Asia.

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